Section, Transect

The word section, or rather transect, designates a system for land observation or the representation of a space, along a linear path and following the vertical dimension, aimed at emphasising a superposition, a spatial succession or relations between phenomena: geological section, bio-geographical section or transect.

The notion of transect, recently entered into French geographical vocabulary, probably through bio-geography, therefore implies the horizontal dimension of observation better than the word section. Graphical representations may be reduced to a representation of the vertical dimension of a (geological, pedological...) superposition alone, or more normally for a transect, may follow the horizontal line of the space being studied.

The â€˜section' may also be natural, giving a direct view of a geological or pedological lay-out, as in the case of a quarry or a road trench.

See also â€˜profile', which does not represent the part of the arrangement that is below ground ("ReprÃ©sentation, vue latÃ©rale, ou aspect d'une chose dont les traits, le contour, se dÃ©tachent " , according to the Petit Robert)

- Topographic profile, or the horizontal representation of a relief, showing only the way it is profiling on the horizon
- River profile: a longitudinal (along the stream) and transversal (perpendicularly cutting across it) balance profile (so that deepening and alluviation compensate each other)
- Urban profile (or skyline): like a topographic profile, a horizontal representation constituted by the line of roofs
- Pedological profile: a graphic representation of the superposition of layers in a soil
- Pollen profile: a figurative representation of the distribution of various types of pollens in a formation
- Population profile: used also in order to characterise a statistical population.

-Discussion

The notion of the section or the transect is not restricted to the study of natural phenomena. Introduced during the nineteenth century in reference to the altitudinal zonation of social forms (or ways of life, or of civilisations) from mountain to plain, it was used as a metaphor and figuratively by geographers and specialists in the social sciences during the late nineteenth and early twentieth centuries (K. Ritter, E. Reclus, the school of Le Play, Patrick Geddes, et al). The "Valley Section" of P. Geddes in particular is a tool for reflecting about the evolution of social organisations from the most primitive to the most elaborate forms (urban societies) (NB: P. Geddes draws a longitudinal profile of the valley).

As in physical geography, it is possible to substitute a diagram-block in three dimensions for the section. This application is attributed to Emmanuel de Martonne in geo-morphology, and to Isaiah Bowman in regional geography. The introduction of these types of diagrams in human geography in school books, which was directed by Lacoste at Nathan (editor) in the seventies refers to the same type of graphic representation .

The use of this notion (whatever term is used) is however not limited to pointing out a vertical variation: for example, the term â€˜urban transect' is used to designate an observation made along a path that is relevant to the spatial distribution of any set of values: here, notably, a centre-periphery transect, showing in particular the variations in land prices, settlement, or population densities.

Some graphic representations show how human societies use various resources by laying them out in tiers along a vertical gradient, the way mountain societies do, by multiplying fixed installations at various levels of the altitudinal zonation and by circulating between these levels of their territorial system all year long. It is the principle of space-temporal graphs showing the mobility of agro-pastoral systems belonging to transhumance or semi-nomadism.

The main discussion point is related to the nature of spatial variations along the section:

- 1. Do they occur according to a barely perceptible gradation, or according to discontinuities (threshold issue)?
- 2. What are the factors governing variations in phenomena?
- 3. How can variation factors be classified in hierarchical order?

Further, what representative character does a transect have with regard to the whole surrounding space? (problems of interpolation between transects; other factors of variation than those mainly at work along the selected path, such as, in the case of mountains, the action of pedo-climates or topo-climates (e.g., â€˜adret' [South-facing slope] v.s. â€˜ubac' [North-facing slope]).

-On discontinuities in general, see Roger Brunet, 1967, Les phÃ©nomÃ¨nes de discontinuitÃ© en gÃ©ographie, Paris, CNRS (MÃ©moires et documents).

-See also " Les discontinuitÃ©s en gÃ©ographie ", L'espace gÃ©ographique, 4, 1997, pp. 297-353.

-On mountain altitudinal zonation, see Jean-Claude Thouret, 1984, " Pour une perspective gÃ©ographique de l'Ã©tagement dans les grands systÃ¨mes montagneux ", Revue de gÃ©ographie alpine, 72 (2-3-4), special issue Montagne, p. 189-212

- Annick Douguedroit, Marie-FranÃ§oise de Saintignon, 1984, " Les gradients de tempÃ©rature et de prÃ©cipitations en montagne " Revue de gÃ©ographie alpine, 72 (2-3-4), special issue Montagne, pp. 225-240.

See also :
-Gradient
-Altitudinal zonation
-time-geography

Bibliographie